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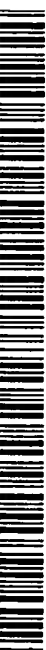
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(54) Title: OPTICAL APPARATUS FOR GUIDED LIVER TUMOR TREATMENT AND METHODS

(57) Abstract: Native tumorous and non-tumorous tissues and thermally denatured tissues can all be identified optically in patient livers by means of one or more probes inserted into the liver. Fluorescence and/or diffuse reflectance values can be used for initially locating a tumorous mass, effectively centering a thermal ablation device within a tumor, monitoring ablation of the tumor about the tumor to assure effective denaturation of the tumor, and locating the mass of denatured tissue after the thermal denaturation treatment and after the treated tissue has returned to the temperature of the untreated surrounding tissue. An existing thermal ablation probe can be modified by the provision of optical fiber within a hollow electrode to form an optical probe performing any of the above functions with an illuminating light source, a light detector and a processor.



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